CLAIMS

The claimed invention is:

1.   A method of managing one or more nodes comprising the steps of:

(a)   forming a packet comprising a network layer header, including a destination address for routing a packet to a destination, a second header identifying a syntax and semantic by which a payload of the packet may be parsed in a predefined fashion, and a payload containing a message to be executed by each of one or more to-be-managed nodes to which the packet is destined,

(b)   transmitting the packet plural times to a plurality of nodes, including the one or more to-be-managed nodes,

wherein the message in the particular packet is executed only a single time regardless of the number of times that a copy of the particular packet is received in the state enabling execution by the to-be-managed nodes of the message therein, and

wherein the transmission of the particular packet plural times increases the likelihood that each of the to-be-managed nodes receives at least one copy of the particular packet in the state enabling execution of the message contained therein.

2.   The method of claim 1 wherein said message is a command.

3.   The method of claim 1 wherein said message is one of a command message, control message, file download message, auto discovery message, and keep-alive message.

4.   The method of claim 2 further comprising the step of:

(c)   after transmitting the particular packet plural times transmitting a second

packet at least once containing a command for causing one or more of the to-be-

managed nodes to execute once a command previously received one or more

times in one of the previously transmitted packets, regardless of the number of

copies of the particular packet received in a state enabling execution by the to-be-

managed nodes of the command therein.

5.   The method of claim 4 wherein a to-be-managed node stores each copy of each

command received in one or more of the particular packets, but executes only a single

version of each command received regardless of the number of copies of the particular

packet received in a state enabling execution by the to-be-managed nodes of the

command therein.

6.   The method of claim 5 further comprising the step of:

(d)   inserting into the particular packet information identifying a version of the

command contained therein for purposes of enabling a to-be-managed node to

identify duplicate copies of the command which need not be executed.

7.   The method of claim 2 wherein the particular packet is inserted into a digital

program signal containing variable length programs, so as not to disrupt the relative

arrival timing of portions of the program signal.

8. The method of claim 2 wherein the particular packet is transmitted via a broadcast satellite network.

9. The method of claim 2 wherein step (b) transmits said packet plural time after a predetermined delay.

10. The method of claim 1 wherein each of the one or more to-be-managed nodes lacks a return path for acknowledging to a source of the particular packet that the particular packet has been received in a state enabling execution of the message contained therein.

11. A method for managing one or more nodes in a network comprising the steps of:

    (a)   receiving one or more times a particular packet comprising a network layer header, including a destination address for routing a packet to a destination, a second header identifying a syntax and semantic by which a payload of the particular packet may be parsed in a predefined fashion, and a payload containing a message to be executed by each of one or more to-be-managed nodes to which the particular packet is destined,

    (b)   if information in each received copy of the particular packet indicates that the particular packet is destined for a particular node, processing the particular packet, including, in response to detecting the second header, obtaining the message in the particular packet, if possible, and

if at least one copy of the particular packet is received in a state enabling execution of the obtained message, executing the obtained message in the particular packet only a single time regardless of the number of times that the particular packet is received in the state enabling execution by the to-be-managed nodes of the obtained message therein,

wherein the transmission of the particular packet plural times increases the likelihood that each of the to-be-managed nodes receives at least one copy of the particular packet in the state enabling execution by the to-be-managed nodes of the message contained therein.

12.   The method of claim 11 wherein said message is a command.

13.   The method of claim 11 wherein said message is one of a command message, control message, file download message, auto discovery message, and keep-alive message.

14.   The method of claim 12 further comprising the step of:

   (c)   after receiving the particular packet one or more times, receiving a second packet containing an execute command, and

   (d)   executing once a command previously received one or more times in a respective previously transmitted copy of the particular packet, regardless of the number of copies of the particular packet received in a state enabling execution by the to-be-managed nodes of the command therein.

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15.   The method of claim 14 further comprising the step of:

   (e)   storing each copy of each command received in a respective previously

   transmitted copy of the particular packet, but executing only one version of each

   stored command regardless of the number of copies of the particular packet

   received in a state enabling execution by the to-be-managed nodes of the

   command therein.

16.   The method of claim 15 further comprising the step of:

   (f) while processing the stored commands, determining if multiple copies of the same

   command are stored in the particular node by referring to version information

   contained in the processed packet.

17.   The method of claim 12 wherein the particular packet is extracted from a digital

program signal containing variable length programs, the relative arrival timing of

portions of the program signal being undisrupted by the presence of the particular packet

therein.

18.   The method of claim 12 wherein the particular packet is received via a broadcast

satellite network.

19. The method of claim 1 wherein each of the one or more to-be-managed nodes lacks a return path for acknowledging to a source of the particular packet that the particular packet has been received in a state enabling execution of the message contained therein.

20. A packet for causing one or more to-be-managed nodes to robustly receive a to-be-executed message from a source in the absence of a return path from the to-be-managed nodes to the source comprising:

    (a)   a network layer header, including a destination address designating that the packet is to be received by a group of nodes,

    (b)   a second header, identifying the packet as being parseable according to a predefined syntax and semantic,

    (c)   an identifier designating each of the to-be-managed nodes as recipients of the packet,

    (d)   a message to be executed, and

    (e)   version information, for preventing one of the to-be-managed nodes from executing the message more than one time.

21. The packet of claim 20 wherein said message is a command.

22. A sequence of plural packets for causing one or more to-be-managed nodes to robustly receive a to-be-executed message from a source in the absence of a return path from the to-be-managed nodes to the source comprising:

    (a)   a first packet containing a message to be executed,

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(b)   one or more second packets, each of which is identical to the first packet, and

(c)   a third packet following the first and second packets containing a message which initiates execution of the command by the to-be-managed node only once regardless of the number of times the message is received at a to-be-managed node.

(a)   23. The packets of claim 22 wherein said message is a command.